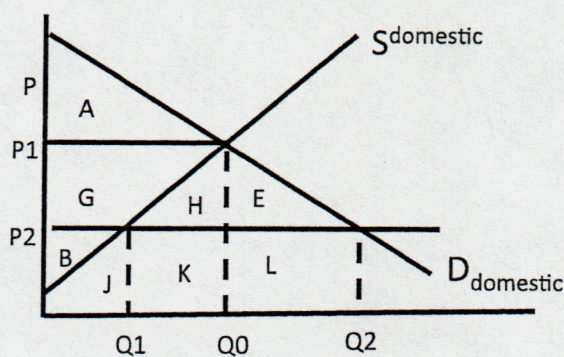63
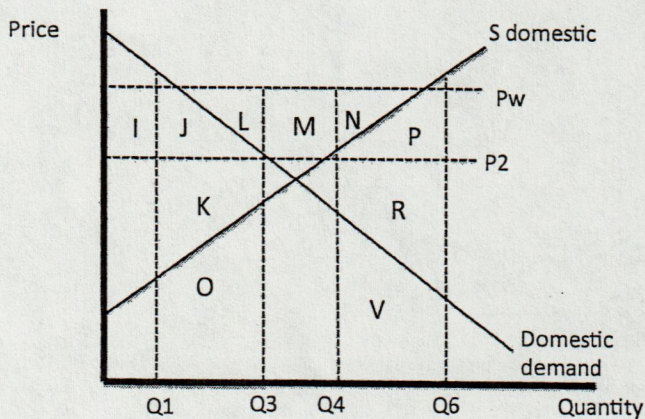
1. Suppose that a small open economy initially is in autarky (with domestic price of P1) and opens this market to free trade at price P2. Assume that the domestic market is perfectly competitive and that the good is homogeneous. (30 points total----three points each)

30

Identify the following using the areas defined on the graph and assume that transfers have no effects on domestic welfare. (*Note you do NOT need to provide an explanation*):

a. *Change* in domestic producer surplus _____ losses of G

b. *Change* in domestic consumer surplus _____ Gains of GHE

c. Net domestic welfare effects (assuming transfers have no effect) ~~losses~~ Gains of HE

d. Total variable cost associated with *changed domestic production levels* _____ HK

e. Costs of importing the changed production level of part d. _____ K

f. Production efficiency gain _____ H

g. *Total* consumer benefit associated with *changed domestic consumption* ~~AGHE~~ EL

h. Costs of importing the changed domestic consumption of part g. ~~BJKE~~ L

i. Consumption efficiency gain _____ ~~AGHE~~ E

j. If this were a large country, would the world price go up or down? _____ Go up

2. Suppose that the government of a small country introduces an _export tax_. The initial price under free trade is Pw. Identify the following using the areas defined on the graph. (30 points total----three points each)   (Note you do NOT need to provide an explanation):
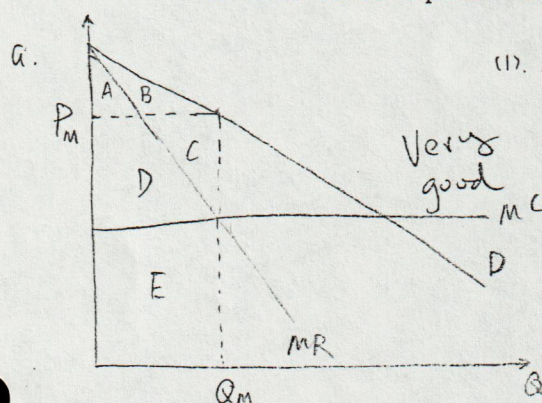
33

a.   Exports after the tax   Q4 – Q3

b.   Change in domestic producer surplus   Losses of IJLMN

c.   Change in domestic consumer surplus   Gani·Gains of IJ

d.   Change in government revenue   Gains of M

e.   Net domestic welfare effects (assuming transfers have no effect) Losses of L and N

f.   Domestic production has fallen. How much did firms formerly earn

     abroad for selling that amount before the export tax?   NPRV

g.   What were the variable production costs associated with the quantity

     in part f.   PRV

h.   Production inefficiency   N

i.   Producer surplus loss associated with firms that leave the market   N

j.   Producer surplus loss associated with firms that continue to sell   IJLM

k.   If this were a large country, would the world price go up or down?   Go up

Part II

Question 2 (Choose either this question on the question above. Do not answer both questions).

2. Suppose a country cannot produce a good but can obtain it from a foreign monopoly. The foreign monopoly produces this good with constant marginal cost (and no fixed costs). Domestic demand is linear.

10   a. Depict the free trade situation. Identify and describe the initial levels of: (1) imports; (2) consumer surplus; (3) price; and (4) foreign profit. (**10 points**)

1∪   b. On a separate graph, depict the impact of a tariff on: (1) foreign producers, (2) domestic consumers, and (3) national welfare. Explain (**10 points**)

5   c. Would there be another policy that would be better for the importing country (assuming that the country still is not be able to produce the good)? Explain (**5 points**)

a.

[graph: vertical axis P_M; labeled regions A, B, C, D, E; curves MC, D, MR; horizontal axis with Q_M and Q]

Very good

(4). foreign profit is DC.
Revenue from selling Q_M is
DCE ($Q_M \times P_M$), the cost
of producing Q_M is E (MC, which
equals to AC, times Q_M). So the
profit is the difference: DC.

b. P

[graph: vertical axis with P_T, P_M; labeled regions B, C, F, E, D, A, G, H; curves MC+T, MC, D; horizontal axis with Q_T, Q_M, Q]

[Continue on the flip side of this page if necessary]

(1). Imports is Q_M. It's determined by the intersection of the monopolist's marginal cost curve and marginal revenue curve.
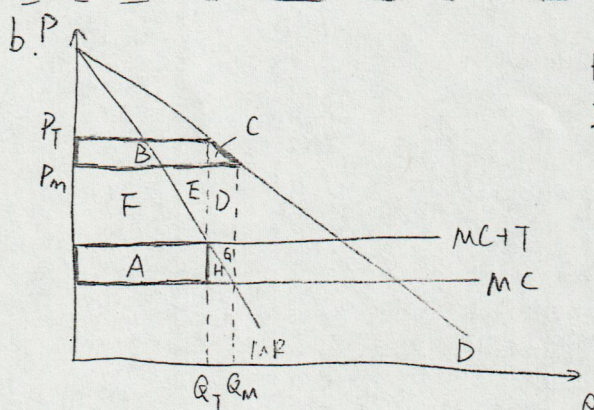
(3) price would be P_M. Given the production level of Q_M, the monopolist will find the corresponding price: P_M on the demand curve.

(2). Consumer surplus is AB.
Total benefit to consumers is ABCDE, the cost of consuming Q_M is DCE, so consumer surplus is the difference between these two: AB.

(1). The imposition of a tariff will increase the cost of the monopolist in operating in this market. New production Q_T will be determined by the intersection of marginal revenue curve and marginal cost plus tariff. New price P_T will be determine by Q_T on the demand curve. In sum, the foreign producer's export to this market decreas from Q_M to Q_T, but price goes up from P_M to P_T.
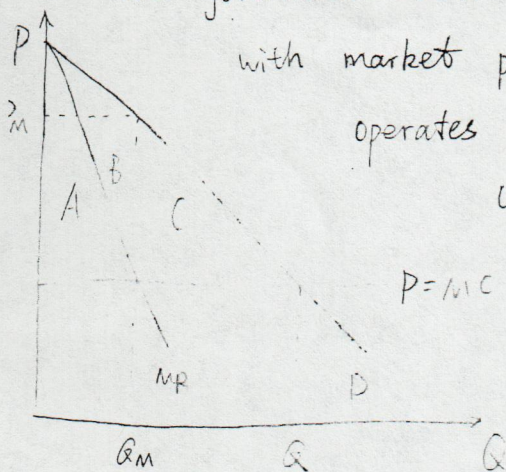
Before the tariff, monopolist's profit is Area. AHGDEF, after the tariff profit is AEFB. The net change is AEFB
−AHGDEF = B − HGD. If B > HGD, then the monopolist's profit increases; otherwise, profit decreases.
(Turns out the profit will fall.)

(2). Because price goes up, consumer surplus will see a loss of BC (the trapezoid), the difference of prices over the demand curve.

(3). The government will gain tax revenue of A ($Q_T \times$ Tariff). Because it's a linear demand curve, A will be larger than B. National welfare will increase by A − B.

Very Good

(3). A better policy would target the real distortion of foreign monopolist, that is its market power of setting price higher than marginal cost. The government should negotiate with the monopolist and put a price ceiling of the product. If the government sets the price equals to MC. The profit associated with market power is eliminated If the monopolist stills operates in this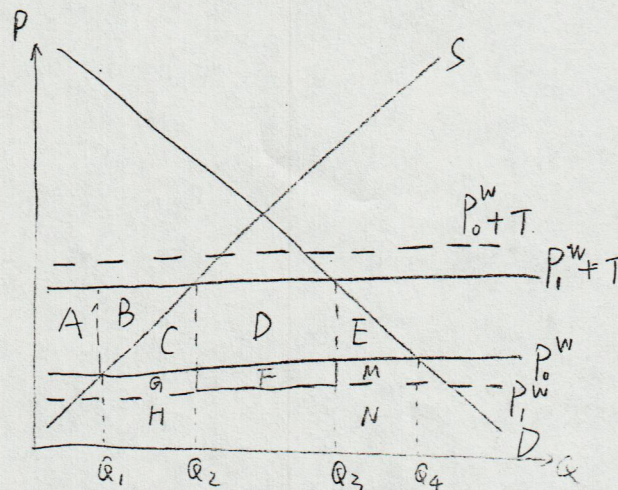 market and produce quantity Q, consumer surplus will rise by ABC, ~~But the policy runs the risk of~~ However. this policy comes with the uncertainty of whether the monopolist will still sell in this market and of how much the monopolist is willing to sell.

P

P_m

B

A

C

MR

Q_M Q

P=MC

D

Q

Part III. You must answer this question. (30 points)

Suppose that the government of a large country in its import market decides to impose a tariff on the goods it purchases from abroad. Assuming that the good is homogeneous, the domestic market perfectly competitive, and that domestic transfers have no effect on domestic welfare, analyze the impact of this policy on:

1. domestic and foreign prices (4 points)

2. domestic consumers (4 points)

3. domestic producers (4 points)

4. domestic government (4 points)

5. foreign producers. (4 points)

6. domestic welfare (4 points)

7. domestic deadweight losses (4 points)

Note that you do not necessarily have to use a graph for this analysis but you need to fully explain the effects if you do not.

1. When the tariff is imposed, foreign producers will pass the tariff to consumers and sell the product ~~at a price~~ at the price of $P_0^w + T$, this will bid up the domestic price to $P_0^w + T$. Domestic demand will decrease ~~as a result~~. Because it's a large country, world price will go down to P_1^w as a result of the decreased world demand ~~to P^w. The new~~ This will affects domestic price to fall from $P_0^w + T$ to $P_1^w + T$. So after the tariff, world price would be P_1^w, domestic price would be $P_1^w + T$.

2. Domestic consumption will decrease from Q_4 to Q_3. There will be a loss of ABCDE in consumer surplus. E represents the loss of consumers priced out of the market. ABCD is the loss of consumers who continue to buy the product after the tariff.

3. Domestic production will increase from Q_1 to Q_2. There will be a gain of AB in producer surplus. B represents the gain of suppliers who did not produce the products before but started producing after the tariff. A represents the gain of suppliers who continued production after the tariff.

4. Imports ~~decrease~~ will decrease from $Q_4 - Q_1$ to $Q_3 - Q_2$. So the government revenue is $DF = (Q_3 - Q_2) \times$ Tariff. D is a transfer from domestic consumers to government. F is paid by the foreigners as a result of lower world price.

[Continue on the flip side of this page if necessary]

5. Foreign producers will not only export less into this market, they will also see a drop in world price. If their cost remains constant, they will also see a drop in their profit. F is the part of domestic government revenue paid by the foreign producers, as a result of the large country's power to drive the world price down. Compared to small country case, foreign producers could not fully pass on the tariff to consumers.

6.

	Gains	Losses
consumer surplus		ABCDE
producer surplus	AB	
Gov't revenue.	DF	
Net	F	CE

The net effect on national welfare depends on F and CE. If F > CE, national welfare increases, if F < CE, national welfare decreases.

7. Deadweight losses are C and E.

C is domestic production inefficiency. the total cost of producing $Q_2 - Q_1$ domestically is CGH, the total cost of importing $Q_2 - Q_1$ is GH, hence the domestic production inefficiency of C.

E is domestic consumption inefficiency. the total benefit of consuming $Q_4 - Q_3$ is EMN, the total cost of importing $Q_4 - Q_3$ is MN, E is the deadweight loss of consumer who are priced out of the market.

Very good